

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **2002323098 A**

(43) Date of publication of application: **08.11.02**

(51) Int. Cl.

F16H 3/62
F16H 3/66

(21) Application number: **2001167439**

(22) Date of filing: **25.04.01**

(71) Applicant: **KYOWA METAL WORK CO LTD**

(72) Inventor: **HIRAIWA KAZUMI**

(54) **MULTISTAGE TRANSMISSION PLANETARY GEAR TRAIN**

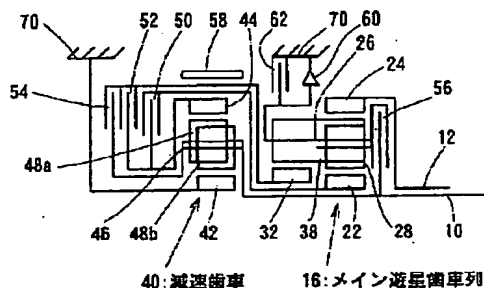
than the first reduction ratio.

COPYRIGHT: (C)2003,JPO

(57) Abstract:

PROBLEM TO BE SOLVED: To obtain a multistage transmission planetary gear train that is small-sized, lightweight, low in manufacturing cost and high in power transmission efficiency.

SOLUTION: A main planetary gear train 16 having a first member (a first sun gear 22), a second member (a second sun gear 32), a third member (a first carrier 26) and a fourth member (a first ring gear 24) is provided. The first member can be connected to an input shaft 10 at least at a first forward velocity, the second and third members can respectively be connected to the input shaft 10, and the latter can be fixed to a case 70 (stationary part) at least at a highest transmission step (a forward 7th or 8th velocity) while the former can be fixed to the case 70 at least in reversing. The fourth member is connected to an output shaft 12. The input shaft 10 can be connected to the first and second members respectively via a reduction gear 40 with a first reduction ratio, and also to the second and third members respectively at a transmission ratio smaller



BEST AVAILABLE COPY